Lisfranc Internal Brace™ Ligament Augmentation Implant System

Surgical Technique
The Lisfranc Internal Brace™ ligament augmentation implant system is a novel technique used to repair Lisfranc ligament injuries. This technique uses a small 1.6 mm Guidewire through the Lisfranc articular surface. An oblong button is placed on the 2nd metatarsal with collagen-coated 2 mm FiberTape® suture passing through the intraosseous Lisfranc complex secured with a 4.75 mm Knotless SwiveLock® anchor to the medial cuneiform.

Advantages:

- No second surgery for hardware removal or broken screws
- Micromotion similar to Lisfranc ligament to accelerate biological healing
- Less joint disruption than that caused by a screw
- Knotless technique

References

Stabilize the Lisfranc complex with the Reduction Clamp and compress the 2nd metatarsal base and the medial cuneiform.

A 2-incision technique is used. A dorsal approach is made overlying the intercuneiform joint and the 1st and 2nd tarsal-metatarsal joints. Care is taken to protect the neurovascular bundle dorsally by staying under the flexor hallucis brevis. The second (medial) approach is made along the medial cuneiform inferior to the tibialis anterior tendon insertion.

Drill through the medial cuneiform with the 3.5 mm drill and drill guide over the 1.6 mm Guidewire. The drill guide will stop the drill at 15 mm depth.

Insert the 1.6 mm Guidewire starting at the dorsal lateral edge of the 2nd metatarsal head aiming plantar towards the medial cuneiform and through the interosseous ligament. The Guidewire should exit inferior to the tibialis anterior tendon. Check Guidewire trajectory under fluoroscopy. Note: Clamp omitted for clarity.
Pull tension on the collagen-coated 2 mm FiberTape suture with the oblong button. Ensure the button is flush and in the correct orientation on the 2nd metatarsal.

Insert the 4.75 mm PEEK SwiveLock® anchor between the suture tails while pulling tension on the FiberTape suture.

Oscillate the 1.6 mm Guidewire from lateral to medial until the Guidewire moves freely by hand.

Load the collagen-coated 2 mm FiberTape® suture with the oblong button through the Nitinol loop on the 1.6 mm Guidewire.
Release the clamp and evaluate the reduction under fluoroscopy.
Cut the FiberTape® suture tails.

Optional
Intercuneiform instability:
a. Drill central portion of the intermediate cuneiform with the drill guide and the 3.4 mm drill bit from AR-8979DS.

Optional
Bridge plating:
a. If 2nd and/or 3rd TMT joint instability is present, a bridging plate is placed dorsally.
b. The plate is secured with screws after the Lisfranc articulation is fixed with the InternalBrace™ ligament augmentation repair.

b. Load FiberTape suture tails through 3.5 mm x 13.5 mm SwiveLock® anchor (AR-8979P).
c. Insert 3.5 mm SwiveLock anchor.
Postoperative Protocol

- A posterior splint is applied
- A total of 6 weeks of non-weightbearing is recommended
- At 2 weeks a removable splint is applied and ankle and subtalar range of motion exercises are performed daily
- Once healing is complete, full weightbearing may be started at week 6 with a CAM boot
- Sport-or activity-specific training can begin at week 12

Ordering Information

Lisfranc InternalBrace™ Ligament Augmentation Repair Kit (AR-1698-CP) includes
- PEEK SwiveLock® Suture Anchor, 4.75 mm
- FiberTape® Suture, collagen-coated, with button
- Drill bit, cannulated, 3.5 mm
- Drill Guide
- Suture Passing Wire, 1.6 mm

DX SwiveLock Anchor Kit (AR-8979DS) includes
- Drill Guide w/ depth stop
- Drill Bit, solid, 3.0 mm
- Drill Bit, solid, 3.4 mm
- Tap for DX SwiveLock Anchor

3.5 mm SwiveLock Anchor
- DX SwiveLock Anchor, 3.5 mm x 13.5 mm AR-8979P

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